DESCRIPTION OF THE FEMALE OF *PHALACROPSYLLA HAMATA* (SIPHONAPTERA: HYSTRICHOPSYLLIDAE)

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Abstract.— The previously unknown female of *Phalacropsylla hamata* Tipton & Mendez is described and an allotype is designated. A key is provided to aid in distinguishing females of this genus.

The genus *Phalacropsylla* includes an interesting assemblage of species adapted to high altitudes. Described species include *P. paradisea* Rothschild 1915, *P. allos* Wagner 1936, *P. nivalis* Barrera & Traub 1967, *P. hamata* Tipton & Mendez 1968, and *P. oregonensis* Lewis & Maser 1978. With the exception of *allos,* these nest fleas have not been commonly collected, even during extensive ectoparasite studies (including nest examinations) within the known range of the genus in the western United States and Mexico. Host records suggest that wood rats, *Neotoma* spp., and closely associated rodents and lagomorphs are normal hosts of the *Phalacropsylla.*

Phalacropsylla hamata was described from a single male collected by V. J. Tipton from a rodent nest in the Sierra Madre Occidental Range (Cerro Potosi) Nuevo León, Mexico, 20 April 1964, at an elevation of 3050 m. We have recently received several specimens referable to this species from the vicinity of Albuquerque, New Mexico. *Phalacropsylla* is redescribed to summarize the characteristics of this genus. Minor differences between the New Mexico males and the male holotype of *hamata* probably represent individual variation rather than subspecific differences (Fig. 3–5).

Phalacropsylla Rothschild 1915

Frontal tubercle and striarium absent. Eyes vestigial, eye spot lightly sclerotized. Genal comb of 2 overlapping teeth; outer tooth slightly over ½ length of narrower, subacute inner tooth. Pronotal comb of 14–18 spines. Abdominal spinelets and mesonotal pseudosetae present. Some subapical bristles of inner side of hind coxae weakly spiniform. Fifth segment of all tarsi with 4 lateral pair of bristles and 1 pair shifted to the plantar surface between the 1st lateral pair. Sternum of male V-shaped, distal arms bifid; distal arm with lightly sclerotized dorsal expansion and short, preapical spiniform bristles, plus long, curved, spiniform bristles in certain species.

Phalacropsylla hamata Tipton & Mendez

Phalacropsylla hamata Tipton & Mendez, 1968, Pac. Insects 10: 177–214.

Material.— All from Bernalillo Co., New Mexico, collected by Curt Montman. Allotype female ex *Peromyscus leucopus,* 20 November 1980. Parallotype female with same data. Male collections include 2 ex *P. leucopus* 20 November 1980, 1 ex *Neotoma albigula* 20 November 1980, and 1 ex *N. albigula* 20 February 1981. Allotype deposited in the United States National Museum of Natural History collection, Washington, D.C.

Diagnosis.— Flea specific differentiation in the absence of males is often difficult or impossible. In the *Phalacropsylla,* however, configuration of the caudal lobe of sternum VII seems to show sufficient distinctiveness to be of value in female specific identification. In *hamata, paradisea,* and *oregonensis* the female sternum caudal lobe is

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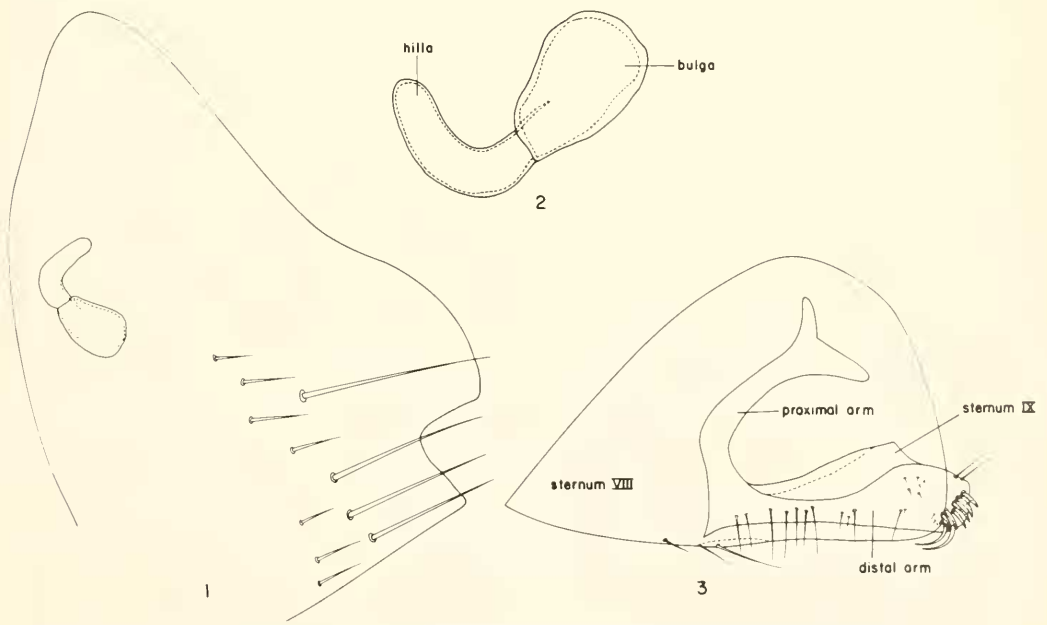
broader than long. The lobe is ca 3.5 × as broad as long in *hamata*, as opposed to less than 2 × as broad as long in *paradisea* and *oregonensis*. *Phalacropsylla* males are readily identified to species with the key presented by Lewis and Maser (1978).

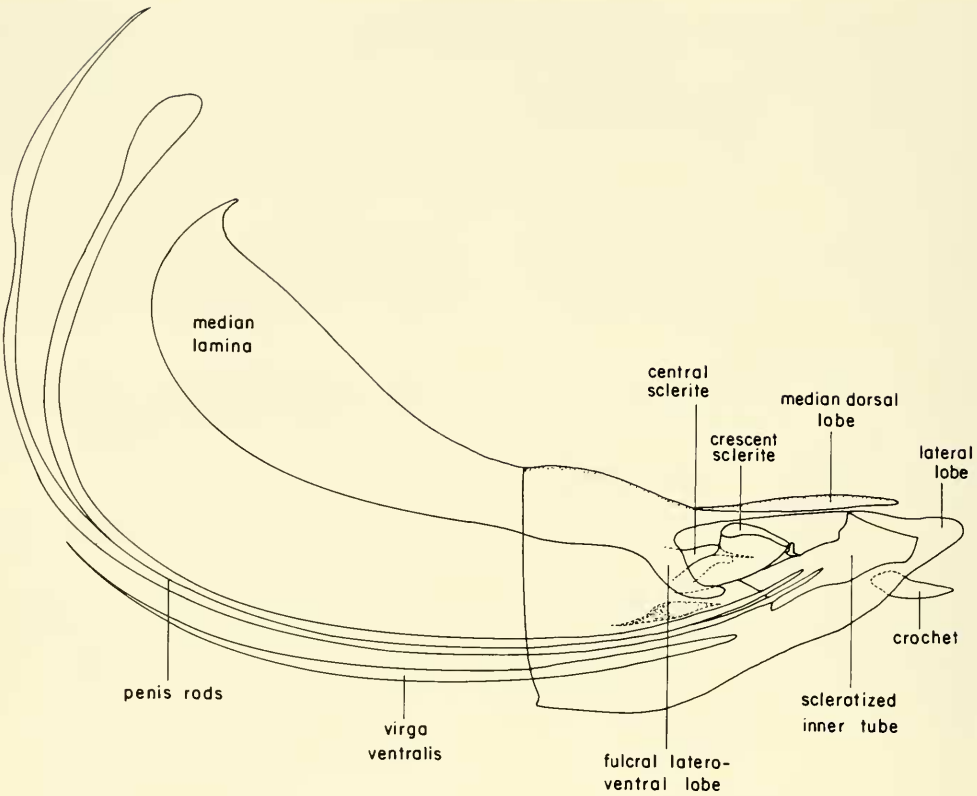
DESCRIPTION OF FEMALE.— *Head*: Preantennal region with 2 fairly straight rows of bristles. Frontal row of 4 small, thin bristles; ocular row of 4 much larger ones and a fine bristle slightly out of line and cephalad of eye spot; 3 thin bristles caudad of ocular row. Maxilla narrow, acuminate distally, extending to base of 4th segment of maxillary palpus; maxillary palpus extending ca ⅔ length of coxa I. Labial palpus extending beyond apex of coxa I. Postantennal region with bristles arranged 1:3:5 on one side and 1:4:5 on the other, the caudal row with fine intercalaries; 18–20 fine hairs along the antennal fossa.

Thorax: Pronotum with a row of 6 large bristles, ventrad bristle 2 × length of others, separated by 5 smaller bristles per side; pronotal comb of 14 spines of ca same length, except for shorter ventralmost pair. Mesonotum with a row of 5 large bristles and fine intercalaries preceded by a row of 7 smaller ones and 15–18 fine bristles scattered along cephalad margin; mesonotal flange with 2 pseudosetae per side (parallotype with 3). Mesepisternum with a large, lateral bristle (parallotype with a fine bristle preceding large bristle on 1 side); mesepimeron with 2 irregular rows of bristles arranged 3:2 on one side and 4:2 on the other. Metanotum (exclusive of lateral metanotal area) with 3 rows of bristles, caudal row of 4–5 large ones and 5 fine intercalaries, a median row of 6 or 7 smaller bristles and a cephlad row of 2 or 3 still smaller bristles; a single fine bristle precedes the 3 rows; lateral metanotal area with 1 large dorsocaudal bristle, a large caudal bristle, and a fine ventral bristle. Metepisternum with 3 subdorsal bristles in a row, a large one flanked by 2 smaller ones; metepimeron with ca 6 lateral bristles arranged 3:3:1 (paratype 2:3:1).

Abdomen: Terga I–IV with apical spinlets arranged (3-4), (4-4), (2-1), and (1-0), parallotype (3-3), (4-3), (3-3), and (1-1). Terga typically with median row of 5–7 large bristles alternating with smaller ones extending almost to ventral margin, preceded by a somewhat shorter row of 7 or 8 smaller bristles and 3 or 4 shorter bristles in an irregular row or patch on dorsocephalad margin. Middle antepygidial bristle ca 2 × length of ventral bristle and almost 3 × length of dorsal bristle. Sternum II with a vertical row of 3 large bristles, preceded by irregular row of 5



Figs. 1–3. *Phalacropsylla hamata*. 1, female sternum VII; 2, spermatheca; 3, male sterna VIII, IX.



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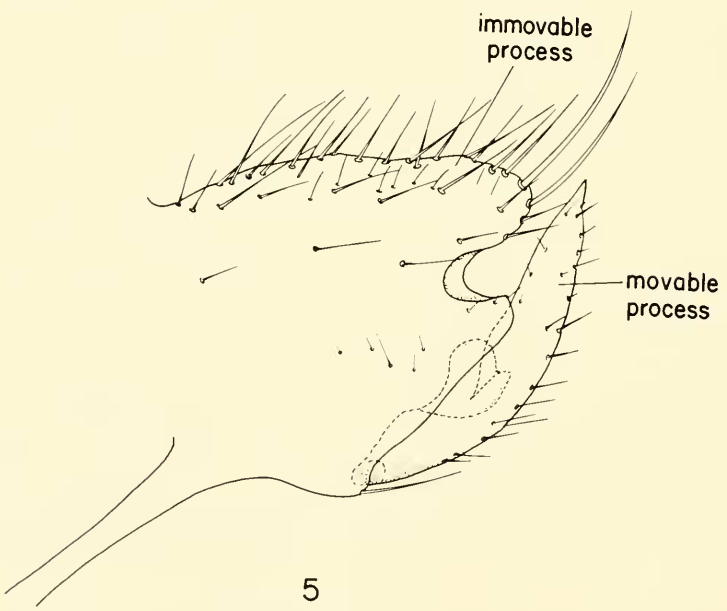

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Figs. 4,5. *Phalacropsylla hamata*. 4, male aedeagus; 5, male clasper.

or 6 smaller bristles and 3 or 4 small bristles toward ventral margin; other unmodified sterna with 4 large bristles preceded by 3 or 4 smaller ones.

Modified abdominal segments: (Fig. 1,2). Sternum VII with a large lobe on ventral half or caudal margin ca 3.5 × as broad as long; sinus directed cephalad, not forming definite ventral lobe. Sternum VII with subventral row of 4 (or 5) large bristles in a slightly oblique row, preceded by an irregular row of 7 or 8 smaller bristles. Spermatheca with bulga ca 1.5 × as broad as high; dorsal and ventral margins slightly concave at basal 3rd, becoming convex to form dilated, caudal ⅔ of bulga; hilla upcurved at basal 3rd, over 4 × as long as wide, about same width throughout, no constriction at basal 3rd. Tergum VIII with 2 irregular rows or 7 of 8 small, thin, bristles above the 8th spiracle; a curved row of 8–10 large bristles nearly sinuate, caudal margin, row beginning beneath ventral anal lobe and terminating just above ventral margin; 3–4 smaller, marginal bristles below ventral anal lobe, with 5–7 small, scattered, submedian bristles anterior to above fringe row.

Discussion

The New Mexico *P. hamata* collection site was the rocky, lower slopes (1600–1800 m) of the Sandia Mountains, east of Albuquerque. These fleas were taken at elevations that include grassland communities grading into juniper (*Juniperus monosperma*)–pinyon (*Pinus edulis*) woodland. Hosts included *Peromyscus leucopus*, which lives among apache plume (*Fallugia paradoxa*) and saltbush (*Atriplex canescens*), and *Neotoma albigula*, which is found in both grassland and juniper-pinyon communities (Findley et al. 1975).

Acknowledgments

We thank Dr. Robert Traub, University of Maryland, for comparing our material with the holotype of *P. hamata* in the U.S. National Museum collection. Mr. Curt Montman, Bernalillo County Department of Health, New Mexico, kindly provided the specimens.

Key to female *Phalacropsylla*

1.	Caudal lobe of st VII longer than broad	2
—	Caudal lobe of st VII broader than long	3
2(1).	Caudal lobe of st VII ca 1.5 × as long as broad	*nivalis*
—	Caudal lobe of st VII ca 1.9 × as long as broad	*allos*
3(1).	Caudal lobe of st VII 3.5 × as broad as long	*hamata*
—	Caudal lobe of st VII less than 2 × as broad as long	4
4(3).	Caudal lobe of st VII rectangular, broadly rounded at apex	*paradisea*
—	Caudal lobe of st VII more triangular, apex bluntly pointed and deflected ventrally	*oregonensis*

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